

Attorney Docket: 1062/D91

Pressurized Vapor Cycle Liquid Distillation**Abstract**

Embodiments of the invention are directed toward a novel pressurized vapor cycle for
5 distilling liquids. In some embodiments of the invention, a liquid purification system is
revealed, including the elements of an input for receiving untreated liquid, a vaporizer
coupled to the input for transforming the liquid to vapor, a head chamber for collecting the
vapor, a vapor pump with an internal drive shaft and an eccentric rotor with a rotatable
housing for compressing vapor, and a condenser in communication with the vapor pump for
10 transforming the compressed vapor into a distilled product. Other embodiments of the
invention are directed toward heat management, and other process enhancements for making
the system especially efficient.